W1TK

The Spark Gap

MARCH 1980

Book VI Vol III

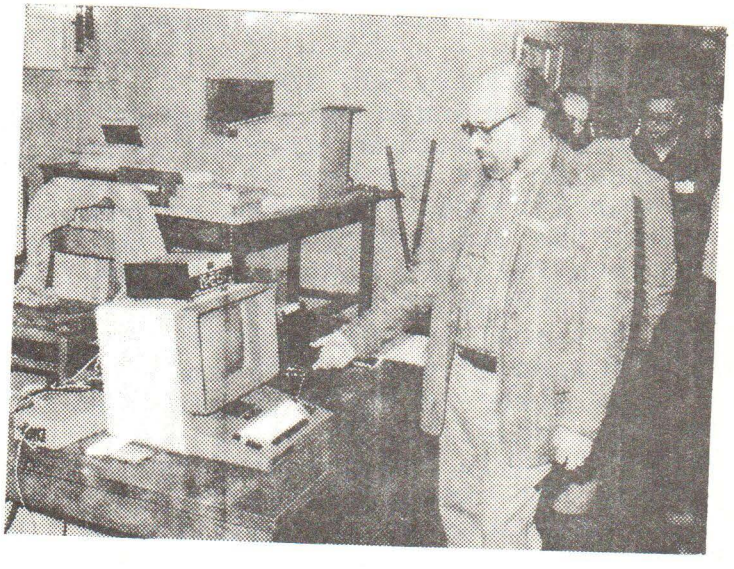
Official Journal of the Wellesley Amateur Radio Society

FIELD DAY!

Although summer still seems to be quite a ways off (although as I write this it is 50 degrees outside), it is time to start planning for the annual Field Day, to be held this year on the weekend of June 28-29. There has been some controversy as to whether we should continue going away to some exotic distant location or stay in Wellesley so that people can drop in for a short time and operate without devoting the entire weekend to Field Day. If you have an opinion on this now is the time to make it known by attending the meetings or by contacting any of the club officers.

The club is also planning to once again operate the June VHF QSO Party. This is quite an interesting event especially to those of you whose operating experience is limited to HF of VHF repeater operations. It is quite exciting to hear Michigan coming through on 2 meter aurora or working California on six. If this kind of thing sounds interesting (and both these examples have occured during past contests) sign up now either at the meetings or contact Glenn Brodie, N1ACN, at 443-8677. □

On January 17 and February 7 at the regular club meetings we were privileged to have as speakers Saul Dinman, K1PDX, and Rick Beebe, K1PAD. Saul gave a very informative talk on the basics of microprocessors, using the Morse code copier/sender he constructed as an example. (See photograph.) Rick Beebe's talk concerned his duties as Section Communications Manager for Eastern Massachusetts. He discussed the emergency plan that has been developed since he took office about a year ago, as well as other aspects of emergency communications and the other duties of the SCM which include issuing ARRL appointments (OTS, OO, etc.) in Eastern Massachusetts. The talk concluded with a question and answer session. □



At the March 6th meeting, Mike Adlerstein, K1FB, author of our monthly "Timeout" column will speak. His exact subject has not been decided as of this time, but will be technical in nature. His past talks have always been interesting, so you can be sure this one will be too. Hope to see you there March 6th. □

MEETINGS THIS MONTH:

March 6, 1980 at 7:30 pm
March 20, 1980 at 7:30 pm
Intermediate Bldg., Wellesley Hills, Mass.

OFFICIAL BULLETIN

Nr 5, dated January 21, 1980:

FCC Gettysburg reports that because of a programming error in early January, a number of Amateur licenses were issued with expiration dates five days after issuance. Holders of such licenses need not communicate with FCC. They may continue operating, and, as soon as possible, will receive superseding licenses through the mail.

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Nr 6, dated January 21, 1980:

A reciprocal operating agreement between the United States and Spain became effective on December 21, 1979. U.S. Amateurs seeking operating permission in Spain should contact the Union de Radioaficionados Espanoles, P.O. Box 220, Madrid 4, Spain, for information on application procedures.

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Nr 12, dated January 31, 1980:

The FCC has amended part 97.69 of the Amateur regulations, thereby granting permission for the use of ASCII in the Amateur Service. The regulations state that the code shall conform to the American Standard Code for Information Interchange as defined in the American National Standards Institute (ANSI) Standard X3.4/1968. F1 emission shall be utilized on those frequencies between 3.5 and 21.25 MHz where its use is permissable and the sending speed shall not exceed 300 baud; F1, F2 and A2 emissions may be utilized on those frequencies between 28 and 225 MHz where their use is permissable and the sending speed shall not exceed 1200 baud; F1, F2 and A2 emissions may be utilized on those frequencies above 420 MHz where their use is permissable and the sending speed shall not exceed 19.6 kilobaud. The effective date for this amended section will be approximately thirty days after publication in the Federal Register.

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Nr 18, dated February 13, 1980:

The new FCC rules permitting the use of ASCII teleprinter code, as described in ARRL Bulletin number 12, go into effect March 17, 1980. □

Auctions/Flea Markets

March 7: Lowell Univ. ARC indoor auction, Cumnock Hall, Lowell, Mass. The doors open at 6:00 pm, auction starts at 7:00. Tables for items over $75.00 and under $1.00. Talk in on 146.52.

March 8: Interstate Repeater Society auctionfest at the Sheraton Wayfarer Convention Center, Manchester, N.H. Doors open at 7:00 am, auction starts at 10:00. Banquet will be held in the evening. Contact I.R.S., P.O. Box 94, Nashua, N.H. 03061.

April 12: Wellesley ARS annual auction, Wellesley High School, just off Route 16. Check in starts at 10:00 am and auction at 11:00. Separate tables for smaller items. Talk in on 147.63/03 or 146.04/64.

April 27: Framingham ARA spring flea market, rear of Framingham police station. Reservations and information via FARA, P.O. Box 3005, Framingham, Mass. 01701. Talk in on 147.75/15 and on 146.52. Doors open 10:00 to 2:00. □

FROM THE MAILBAG

It is getting to that time of the calendar year when we must begin planning Field Day. Field Day '80 will run from June 28 to 29.

For the past four or five years we have gone to distant areas to conduct our exercise because of better operating conditions. Some members expressed their choice to remain locally while others have voted to go elsewhere.

At the next meeting of the club on March 6th, we will be taking that vote again as to whether we should remain locally or go off somewhere. We would like to see a good showing of members at this meeting so you can properly express your preferences as to where we should have Field Day. Remember, it is your club and you control its destiny.

de Jim Hatherley, WA1TBY

(Editor's note: if you can't make the meeting, please let one of the officers know your preference!)

The Spark Gap

Official Journal of the Wellesley Amateur Radio Society

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NELS J. ANDERSON, K1UR
32 WESTGATE ROAD, APT. 6
CHESTNUT HILL, MASS. 02167
323-5029

THE "SPARK GAP" IS A MONTHLY PUBLICATION OF THE WELLESLEY AMATEUR RADIO SOCIETY. ITS PRIMARY PURPOSE IS TO KEEP ITS MEMBERS ABREAST OF CURRENT HAPPENINGS, F.C.C. RULES & REGULATIONS CHANGES, AND TO LIST EQUIPMENT OFFERED FOR SALE OR TRADE BY MEMBERS. MEMBERS ARE ENCOURAGED TO CONTRIBUTE TO THE "SPARK GAP" AND MAY SENT THEIR ARTICLES (TYPEWRITTEN IF POSSIBLE) TO THE EDITOR-IN-CHIEF OR TO THE CLUB ADDRESS.

THE WELLESLEY AMATEUR RADIO SOCIETY IS A NON-PROFIT ORGANIZATION DEDICATED TO THE PROMOTION OF AMATEUR RADIO THROUGH INSTRUCTION, FELLOWSHIP, DEMONSTRATION, AND ENCOURAGEMENT OF PARTICIPATION. ANNUAL MEMBERSHIP IN THE SOCIETY IS $8. THE CLUB YEAR RUNS SEPTEMBER 1 TO AUGUST 31. AMATEUR NOVICE AND GENERAL CLASSES ARE CONDUCTED REGULARLY AT NO COST. TO ENROLL IN A CLASS, OR GAIN INFORMATION ABOUT THE SOCIETY IN GENERAL, WRITE:

THE WELLESLEY AMATEUR RADIO SOCIETY
324 WASHINGTON STREET
WELLESLEY HILLS, MASS. 02181

Executive Minutes

Meeting of February 2, 1980:

The meeting was opened at 7:50 pm by President Bill Downing, WA1PQY.

The auction date has been confirmed as April 12, with check in beginning at 10:00 am, and the auction at 11:00.

A volunteer has been found to instruct the Novice class, which will now begin shortly.

The subject of Field Day sites was discussed briefly.

The meeting was closed at 9:36 pm.□

Minutes

Meeting of February 7, 1980:

The meeting was opened at 7:51 pm by President Bill Downing, WA1PQY.

There was no secretary's report, so the treasurer's report was read first.

It was announced that the annual a tion would be held on April 12, and a request was made for help.

It was announced that the Novice class would begin shortly.

The upcoming VHF QSO Party and Field Day contests were discussed.

First discussions with the Boston Marathon officials will take place later in February.

The possibility of helping with an antique auto race in Wellesley on May 18 was discussed.

The rest of the meeting was devoted to a talk by Eastern Massachusetts SCM Rick Beebe, K1PAD, who discussed the SCM's responsibilities.

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Meeting of February 21, 1980:

The meeting was opened at 7:54 pm by President Bill Downing, WA1PQY.

The secretary's report was read and accepted.

The president asked for further volunteers for the auction on April 12.

The Novice class will be taught by Erik Thoresen, K1OGF, and Kevin Kelly, WA1YHV, and will start during the first or second week of March.

No further information has been received on the upcoming Boston Marathon.

The treasurer's report was given.

Glenn Brodie, N1ACN, discussed the June VHF QSO Party.

It was announced that the next executive committee meeting would be held on March 5th.

The meeting was closed at 8:21 pm.

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Meeting of January 17, 1980:

The meeting was opened at 7:48 pm by President Bill Downing, WA1PQY.

The minutes of the previous meeting were read.

A report on the January VHF Sweepstakes results was made.

The treasurer's report was given.

It was announced that an instructor was still needed for the Novice class.

The remainder of the meeting was devoted to a talk by Saul Dinman, K1PDX, on his microprocessor Morse code sender/copier. □

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Novices and Technicians will be able to operate in Canada under the new no-permit rules relaxation. However, they'll be limited to the operating privileges they enjoy when operating in the United States.

hr Report, February 1, 1980□

FROM THE MAILBAG

(The following letter is written to the administrator of Mt. Equinox.)
Dear Mr. Harvey:

I wish to confirm that the Wellesley Amateur Radio Society has permission to operate from Mount Equinox from Friday, June 13 to Monday, June 16, 1980. While we understand that you will not grant us exclusive permission to operate from the location, I do request that if other Amateur groups to ask permission to operate from the mountain over this period of time that you ask them to contact our group. We then will coordinate activities with them. If two Amateur groups arrive unknown to each other, there is a high chance that one would interfere with the other forcing one group to leave. Since each group will go through extensive preperations for the weekend, one group will suffer substantial disappointment. Having been the first group to contact you we feel we should take the responsibility of coordinating with other groups.

If the mountain is rented to the Antique Auto Racing Club over that weekend, as it was last year, we have secured exclusive operating privilages from them. We will be handling the safety communications with Amateur radio along the route on the mountain as we did last year. In this event, we strongly urge you to forward names and addresses of Amateurs wishing to operate as they will interfere with the safety communications and we will have to ask them to leave. Unfortunately, last year one Amateur arrived at the site, after much expense, and without knowledge of our exclusive permission and the auto race. He did have to leave the mountain and was quite disappointed. Hopefully our cooperation in this matter will result in no disappointments this year.

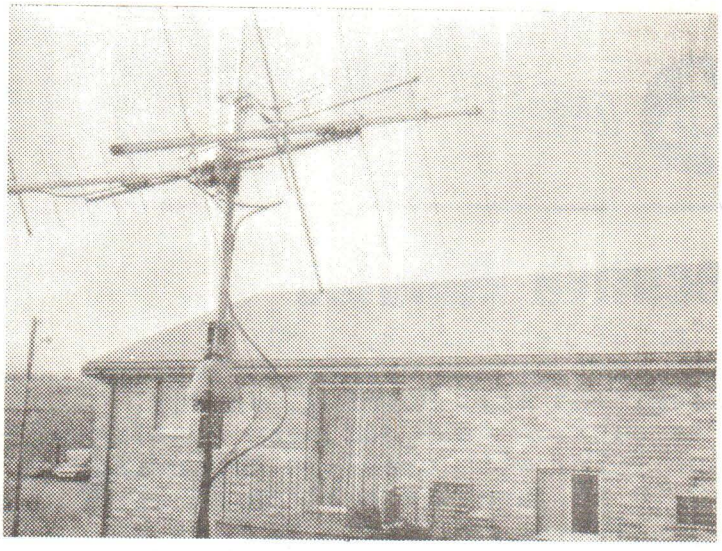
We look forward to visiting the mountain again this summer and to possibly seeing you as well.

Sincerely,
Glenn A. Brodie

CLEARING THE AIR

Once again it is necessary to request that the members send in any information or articles that would be of interest to other club members for publication in the Spark Gap. So far there has been no response whatsoever to past pleas which has been rather discouraging. Come on guys, this newsletter cannot be a one man effort. Send your articles or anything of interest to your editor (address and phone number on page 3). Also, don't forget that you can advertise equipment for sale in the Spark Gap at no charge to club members. These ads also go to the editor. □

OSCAR Anyone?



As proof that it is possible to operate from an apartment, with beam antennas no less, this photo of your editor's QTH is presented. Antennas for 450 MHz FM, 2 meter FM, and 2 meter OSCAR transmissions (as well as SSB/CW groundwave) are az-el (azimuth-elevation) mounted. Also in use but out of view are a 10 meter dipole and random wire for OSCAR reception and low band operation. All of which shows that even with an unfavorable QTH it is possible to get on the air. What's your excuse? □

CROSSWORD PUZZLE

by David Kirschen, WA1ZRH

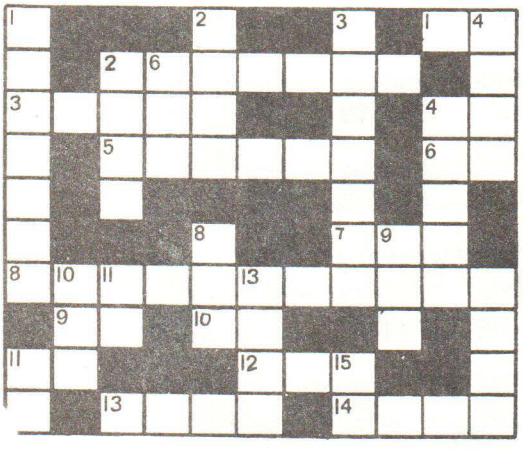
ACROSS:

1. One-way electricity.
2. What keeps you from listening to nothing but noise.
3. Highest license.
4. _____ ahead
5. Every antenna that goes __ will eventually come ____.
6. Where you'd live if you had a "G" call.
7. Guy-line insulator.
8. What makes power supplies heavy.
9. Integrated circuit.
10. Female ham.
11. Old timer.
12. Standard time.
13. Feedline wire.
14. Collectors' item.

DOWN:

1. Part of a beam.
2. Kind of antenna.
3. Hunting receiver.
4. Most important person on Field Day.
5. Antenna impedence matcher.
6. Low power.
7. Wire size.
8. What you want the fellow tuning up on your frequency to do.
9. Same as 12 across.
10. Feature that lets transceivers receive away from transmit frequency.
11. Opposite of 1 across.
12. Ham magazine.
13. Magnetic lines of force.
14. Old man.
15. General call.

(Answers on next page.)



OLDE TIME RADIO

45 Years of Broadcasting

In the year 1920, ham operators were slowly salting away their spark coil transmitters. Just a few years before, a young engineer named Lee DeForest had added a third element to the diode valve. Music was beginning to fill the air and was free for all who wanted to put together the apparatus.

Just who was the first to broadcast is a matter of controversy. Experimental licenses were issued by the Bureau of Navigation, WWJ and KDKA both claiming the honor of being first. C.D. Herrold was said to have conducted experiments as early as 1909; a daily broadcast may have begun as early as 1910. Dr. Frank Conrad was broadcasting from his home under the call letters 8XK. W.D. Reynolds, founder of KLZ in Denver had a 100 watt station on the air as early as 1919.

In the beginning a power of 10 to 20 watts was considered normal; a station with 500 watts was a giant. However, don't be fooled; some of those little ten watters reached out a long way! There was no minimum shcedule. You could come on the air and go off whenever you desired. Some stations were only on the air a couple of hours in the morning and one or two at night.

All the early transmitters were home-brewed. It wasn't until around 1921 that commercial manufacture of transmitters began. Even then many stood by their belief that the home-built rig was good enough. Gear was hard to come by in those days; KFH in Wichita had to search the country to find enough equipment to build a 50 watt station. Crystal control was unknown. Percentage of modulation? Who knew? Plate voltage was obtained from either a motor generator or a cheaper method known as a chemical rectifier. The loss was great; you had to feed 2000 volts of AC into this type of rectifier to get 1200 volts out (or less) of DC. Metering was scarce: a hot wire RF ammeter, a filament voltmeter, and a plate voltmeter if one could be found. The hot wire ammeter was very slow in reaching equilibrium, but after a half hour or so of operation, you could pretty well tell what amount of

RF you were putting out. One station, WTAM in Cleveland, used a bank of storage batteries for its voltage supply. Pretty expensive, you say? Well, the station was then owned by the Willard Storage Battery Company. They really had DC, and they saved on filter capacitors and chokes.

One of the early 500 watt transmitters used a water-cooled tube. If pressure got low, the plate supply would shut off to protect the tube until the pump brought pressure up again. On one occasion, a radio inspector was visiting a station using one of these transmitters. While using the bathroom, in the normal course of events, there was a sudden drop in water pressure, and the transmitter went off the air. The engineer had to wait five minutes until the tank refilled before he could get back on the air. His face may still be red.

Licenses for engineers were issued under the Department of Commerce. There was no multiple-choice questions on the exam; each question had to be answered fully. A 20 wpm code test was required because some of the stations operated on the lower bands and had to maintain a listening watch on the marine distress frequency so the station could be shut down in case a distress call was heard. □

--from "Broadcast Engineering" 11/65

hr REPORT

Lake Placid's Olympic amateur station is operating with the callsing VE3OLP/W2, which was issued by Canada's Department of Communications for the event. VE3OLP, for Olympics Lake Placid, is being used at the New York State Olympic site as current FCC regulations prohibit issuing U.S. special events callsigns.

hr Report, February 15, 1980

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Two new Russian Amateur satellites should be launched and in operation by the end of February, JR1SWB, secretary of JAMSAT, reports. He says he was told of the forthcoming launch by a high ranking official of the Russian Radiosport Federation. The two satellites, designated "RS-3" and "RS-4" are both supposed to be checked out and ready to go. This report seems to confirm recent suspicions that unusual 10-meter signals heard from Russia in mid-January were satellite related.

OSCAR users and other Amateurs are urged to watch the 29.3 to 29.5 MHz slot carefully for unusual telemetry signals, and report anything unusual to AMSAT or ARRL.

hr Report, February 15, 1980

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NOAA weather broadcasts may not be transmitted via Amateur stations, the Commissioners confirmed in denying RM-3457. The Commission noted that weather information is available from many other sources, and thus the ban on the retransmission of "broadcasts" by Amateurs is still desirable.

The ban, it should be noted, also applies to all other such "broadcasts" including WWV's time and propagation reports.

hr Report, February 1, 1980

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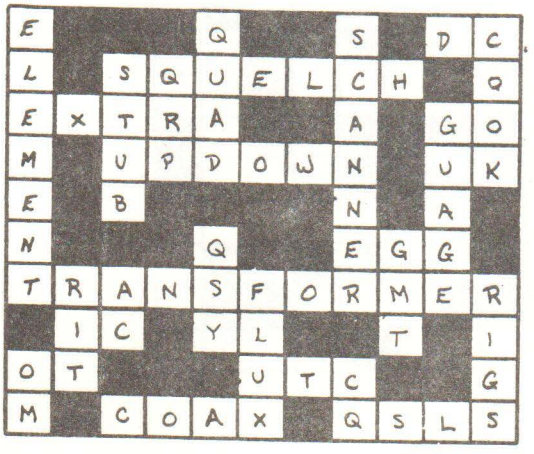
Club callsigns may turn up for consideration at this coming week's FCC Agenda Meeting. A decision on whether club callsigns will be continued or phased out in this final consideration of Docket 21135 probably will not be reached immediately, however.

hr Report, February 22, 1980□

ELECTRONIC EXCHANGE

FOR SALE: Heathkit HW-101 80-10 meter transceiver. Mint condition, no modifications; alligned by Heath. AC power supply, PTT microphone included. Owner's manual. Price $365.00 firm. Call WA1GBF, Charlie, in Wellesley at 235-8690. □



CHUCKLE KORNER

"... I never properly realized how strange our hobby must appear to the r -Amateur until I was sitting in a shopping precinct operating my IC-215 when a little boy, about six years old, said to his parent in a loud, piercing voice, 'But, Mummy, why is that man talking to the handbag?'"

from a letter to Radio Communications, RSGB, via ARNS.

hr REPORT

Harry Dannals, W2HD, was re-elected ARRL President at the League directors' meeting in Newington in mid-January. Carl Smith, WØBWJ, became First Vice President as Vic Clark, W4KFC, stepped aside so as to devote more time to his leadership of the Long Range Planning Committee (though he remains an ARRL Honorary Vice President and President of IARU Region 2). A new office, Vice President for International Affairs, went to Noel Eaton, VE3CJ, while Larry Price, W4RA, and Max Arnold, W4WHN, were named Second and Third Vice Presidents respectively. W6EY and W6KW were both also elected Honorary Vice Presidents.

hr Report, January 25, 1980

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AMSAT's Phase III-A satellite will be flying earlier than planned. Latest word is that the launch date for Phase III has been moved back to May 20th from May 30th.

Acceptance tests on the Phase III transponder were successful and the unit has been approved and licensed by the Deutsche Bundepost.

The Phase III-A spacecraft was shipped to Frankfurt on February 19 and then brought by a special trailer to Toulouse, France, for vibration tests (February 27) and final acceptance of the satellite flight plans. W3GEY, K1JX, DJ4ZC, and other members of AMSAT/Deutschland are en route to Toulouse to monitor the testing.

hr Report, February 22, 1980

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A packet radio repeater went into service February 10 in Ottawa, Ontario operating on 220.34 MHz. On the HF bands, VE7APU has a packet beacon going on 14.076 MHz. It's operating at 75 baud, transmitting for 30 seconds every five minutes using HDLC protocol. It is to be part of an HF packet net linking Vancouver with Saskatoon and Ottawa. Thanks CARF News Service.

hr Report, February 22, 1980

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"Grandfathering" to Extra Class of General or Advanced Class Amateurs licensed prior to incentive licensing in 1968, on the grounds that incentive licensing unjustly deprived those Amateurs of privileges they rightfully held, is being sought in a Petition for Rule Making filed by K3ZKW and supported by signatures from about 700 other Amateurs. Comments on RM-3541, with a copy to K3ZKW, must be filed with the Commission by February 21.

hr Report, February 1, 1980□

OFFICERS

PRESIDENT:
Bill Downing, WA1PQY, 235-4484
VICE PRESIDENT:
Nels Anderson, K1UR, 323-5029
CORRESPONDING SECRETARY:
Bill Hanlon, N1ADY, 384-8056
RECORDING SECRETARY:
George Young, WA1YAU, 237-2082
TREASURER:
Jim Hatherley, WA1TBY, 254-6042
OPERATING ACTIVITIES:
Joe McGrath, WA1JIR, 435-6893
FUND RAISING:
Kevin Kelly, WA1YHV, 242-0341
EDUCATION:
Dick Magnanti, WB1BUQ, 235-6371
EMERGENCY COORDINATOR:
Don Chesley, WA1HVS, 655-5211
STATION MANAGER:
Dick Paret, WA1ZLQ, 762-5074
EQUIPMENT MANAGER:
C.J. McDonald, WB1BUM, 332-6091
TRUSTEE:
Lud Fasolino, K1LF, 237-0316
REPEATER COMMITTEE:
David Curry, K1TK, 237-2450
Bill Downing, WA1PQY, 235-4484
Scott Nacey, WA1YOJ, 235-1599
Dick Paret, WA1ZLQ, 762-5074

CLUB ROSTER AS OF FEBRUARY 1, 1980

Adlerstein, Evelyn WB1CTZ	24 Bobolink Rd., Wellesley, Ma. 02181	235 1190	T
Adlerstein, Mike K1FB	24 Bobolink Rd., Wellesley, Ma. 02181	235 1190	E
Allen, John K1FWF	44 Walnut St., Hudson, Ma.	01749 562 3045	E
Anderson, Nels K1UR	32 Westgate Rd., Apt 6, Chestnut Hill Ma.	323 5029	E
Andrews, George E. WB1FEE	291 Nehoiden St., Needham, Ma.	02192 444 3808	G
Belasco, Steven WA3CPK	20 Ridge Rd., Waban, Ma.	02168 332 3082	T
Bradley, Pete N1ADX	200 E. Main St., Westboro, Ma.	01581 366 2511	G
Brewer, Frank WB1GCU	P.O. BOX 249, Dover, Ma.	02030 785 0015	N
Brodie, Glen N1ACN	206 Boston Post Rd., Sudbury, Ma	01774 443 8677	G
Brodie, Nina WB1ECJ	206 Boston Post Rd., Sudbury, Ma.	01774 443 8677	T
Broeg, Phil W1HBB	9 Woodside Lane, Burlington, Ma	01803 272 7612	G
Brown, Howard J. Jr. K1VFY	30 Greystone Rd., Dover, Ma.	02030 785 1999	G
Burton, Tom KA1DHM	61 Whittier Rd., Wellesley, Ma.	02181 235 6353	N
Callahan, Frank P. N1ACO	3 Hobbs Brook Rd., Weston, Ma.	02193 894 3407	A
Caramanica, Brian WB1ALT	80 Fiske Ave., Waltham, Ma.	02154 899 8014	N
Chabot, Charles WA1GBF	11 Trinity Ct., Wellesley, Ma.	02181 235 1012	T
Chick, Howard WB1ECG	648 W. Central St., Franklin, Ma.	02038 528 1987	N
Choy, Wing KA1BHZ	197 Chiswick Rd., Brighton, Ma.	02135 254 4675	T
Cohan, Morton D., WB2SBW	16 Oriole Rd., Medfield, Ma. 02052	482 2700	T
Corio, Mark KA1DHQ	30 Highland St., Marlboro, Ma.	01752 481 8122	N
Curry, David K1TK	Box 1149, W.P.I. Worcester, Ma.	01609 237 2450	E
Curry, Robert C. KA1DHR	18 School Lane, Watertown, Ma. 02172	924 7305	N
Dinman, Mark A. WB1FCO	27 Alden Rd., Wayland, Ma.	01778 358 2519	G
Dinman, Saul K1PDX	27 Alden Rd., Wayland, Ma.	01778 358 2519	A
Downing, William WA1PQY	90 Arnold Rd., Wellesley, Ma.	02181 235 4484	G
Eddy, Chan WA1YOL	16 Lenlew St Apt #14, Derry NH	03038 603 432 3589	A
Ferris, Frank W4TYZ	120 Williams Ter., Warner Robins Ga	31093 923 4492	A
Fusco, Tony WB1FTD	69 Mallard Way, Waltham, Ma.	02154 893 3398	G
Gallagher, Edward WB1FCZ	87 Beaufort Ave, Needham, Ma.	02192 449 1718	N
Garfield, Frances WB1BVA	Doppingbrook Rd., Sherborn Ma	01770 655 6033	T
Garfield, Joseph WB1BUZ	Doppingbrook Rd., Sherborn Ma	01770 655 6033	A
Getter, Carl W1MIJ	58 Felch Rd., Natick, Ma.	01760 655 0142	A
Goldman, David W1YSW	26 Priscilla Cir., Wellesley Ma	02181 235 6259	G
Graf, Al W1OQP	391 Worcester Rd., Wellesley, Ma.	02181 235 1538	A
Halcrow, William KA1AJK	Sutton Ave., Oxford, Ma.	01540 987 0471	N
Hanlon, Laura KA1EAQ	49 Vine St., Wrentham, Ma.	02093 384 8056	N
Hanlon, Sally	49 Vine St., Wrentham, Ma.	02093 384 8056	
Hanlon, William N1ADY	49 Vine St., Wrentham, Ma.	02093 384 8056	A
Hatherley, James WA1TBY	46 Hobson St., Brighton, Ma.	02135 254 6042	A
Heine, Laurence WB1FCW	264 Washington St., Wellesley, Ma	02181 235 1120	N
Heine, Madeline WB1FCX	264 Washington St., Wellesley, Ma	02181 485 4253	N
Jacobson, Alan H. WB1ELD	70 Beaver Rd., Weston, Ma.	02193 237 0553	T
Jacobson, Donald WA1ZXR	70 Beaver Rd., Weston, Ma.	02193 237 0553	N
Jansen, Louis T. W1FL	4925 Washington St., W. Roxbury Ma	02132 327 3646	E
Kelly, Kevin WA1YHV	7 Lawnwood Place, Charlestown	02129 242 0341	E
Kent, David L. N2AWO	W.P.I. Campus Box 2262 Worc	01609	G
Kirschen, David WA1ZRH	8 Westview Rd., Framingham, Ma.	01701 877 1497	A
Knight, George	117 Fairfield St., Needham, Ma.	02192 449 0298	
Lenk, Walter K1YTY	22 Priscilla Cir, Wellesley, Ma.	02181 237 9289	G
Levin, Ted WB1CFC	8101 Sunrise Lakes Dr, Sunrise Fl	33322 742 6453	G
Levine, Carlisle WB1ECK	1921 Commonwealth Ave., Auburndale	02166 244 3818	E
Loring, Edward P. KA1CJE	18 Thomas Rd., Wellesley, Ma.	02181 235 6695	G
Magnanti, Richard WB1BUQ	80 Kingsbury St., Wellesley, Ma.	02181 235 6371	E
McDade, Henry J. W1LMU	194 Winslow Rd., Waban, Ma.	02168 527 4269	A
McDonald, C.J. WB1BUM	48 Hale St., Newton, Ma.	02164 332 6091	T
McDonald, Dennis T. WB1EBW	Bridon Marine, Roadtown,Tortola BWI		N
McGrath, Joe WA1JIR	143 Hayden Rowe, Hopkinton, Ma.	01748 435 6893	A

McNair, Kenneth KA1ACX	105	Blake St., Needham, Ma.	02192 444 5317	N
Miller, Stephen N1AOG	22	Saddle Club Rd., Lexington Ma	02173 862 9096	G
Nacey, Scott WA1YOJ		Box 739 W.P.I., Worcester, Ma	01609	
›rien, John J. KA1BDE	330	Coney St., E. Walpole, Ma.	02032 769 3796	G
›onnor James W1MIC	84	Prince St., Needham, Ma.	02192 449 1936	A
Pavone, Edward AF1P	61	Hawthorne St., Belmont, Ma.	02178 484 5659	E
Reed, Scott KA1ADB	17	Yurick Rd., Needham, Ma.	02192 444 4924	N
Rehbein, Roy AD1M	1	Cutler St., Hopedale, Ma.	01747 473 9610	E
Rehbein, Scott WB1GZE	1	Cutler St., Hopedale, Ma.	01747 473 9610	G
Reynolds, Charles Jr. KA1AXW	33	Washington Park, Newton, Ma.	02160 527 6714	T
Riley, Thomas WB1BUN	50	Hale St, Newton, Ma.	02164 244 3239	N
Ruggiero, Richard WA1ZLN	11	Avon St., Natick, Ma.	01760 655 1928	T
Schermerhorn, 'Skid' W1TTY	11	Chestnut St., Wellesley, Ma.	02181 235 1987	A
Sline, George WB1BVB	395	Weston Rd., Wellesley, Ma.	02181 235 5244	T
Smith David K1BSO	35	Kingswood Rd., Auburndale, Ma.	02166 965 2463	E
Smith Karen WB1FGN	55	Singletree Rd., Chestnut Hill	02167 232 5646	G
Smith, Phillip WB1FGJ	55	Singletree Rd., Chestnut Hill	02167 232 5646	G
Smith, Roger P. W1EOA	7	Berkeley Rd., Wellesley, Ma.	02181 235 6239	E
Spaulding, Les WA1ZTO	14	Madison Ave., Newton, Ma.	02160	G
Thoresen, Erik J. K1OGF	28	Lookout Ave., Natick, Ma.	01760 653 1216	T
Vaccaro, Dennis E. WA1WLX	57	Avon Rd., Wellesley , Ma.	02181 235 2542	A
Vasil, Bruno WB1AJA	58	Bradeen St., Roslindale, Ma.	02131 327 0981	G
Vasil, Bruno Jr. WB1ACF	58	Bradeen St., Roslindale, Ma.	02131 327 0981	N
Veznaian, Kenneth WB1FCY	185	Fellsway West, Medford, Ma.	02155 395 5959	E
Weissel, Richard WA1HRV	39	MacArthur Rd., Natick, Ma.	01760 655 2366	A
Wilmarth, Roger WA1RSV	10	Roberts Rd., Wellesley, Ma.	02181 235 6783	G
Woodbury, Robert K1ZL	12	Meadowbrook Rd., Dover, Ma.	02030 785 1423	E
Woods, Farrell, WB1ELQ	149	Pratts Mill Rd., Sudbury, Ma.	01776 443 6328	A
Young, George WA1YAU	525	Worcester Rd., Wellesley, Ma.	02181 237 2082	G
ıng, Robert W1MXI	83	Oak Ave., Belmont, Ma.	02178 484 0950	G
Dwyer, Vincent	157	Bristol Rd., Wellesley, Ma.	02181 237 0063	
Paret, Richard WA1ZLQ	35	Phillips Ave., Norwood, Ma.	02062 762 5074	T
Stevens, Charles KA1HDV	249	Main St., Cochituate, Ma.	01778 653 8421	N
Turell, John WA1ZLO	18	Cleveland Rd., Wellesley, Ma.	02181 235 6742	A

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